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Juniper AP64 Access Point Deployment Guide

Juniper Networks, Inc.
1133 Innovation Way
Sunnyvale, California 94089
USA
408-745-2000
www.juniper.net

YEAR 2000 NOTICE

Juniper Networks hardware and software products are Year 2000 compliant. Junos OS has no known time-related limitations through the year 2038. However, the NTP application is known to have some difficulty in the year 2036.

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About This Guide

Use this guide to install, manage, and troubleshoot the Juniper® AP64 High-Performance Access Point. After completing the installation procedures covered in this guide, refer to the Juniper Mist™ Wi-Fi Assurance documentation for information about further configuration.

1
CHAPTER

Overview

AP64 Access Point Overview

IN THIS SECTION

The Juniper® AP64 High Performance Access Point is a Wi-Fi 6E hardened indoor and outdoor access point (AP) that provides high-performance wireless access. This weather-resistant AP is suitable for retail curbside, enterprise campus, public venue, outdoor station, and industrial site deployments.

The AP64 has three IEEE 802.11ax radios, which deliver up to 2x2 multiple input, multiple output (MIMO) with two spatial streams. The AP can operate simultaneously in the 6-GHz, 5-GHz, and the 2.4-GHz bands. Alternatively, the AP can operate in two bands and dedicate the third radio for scanning. The AP uses this radio for radio resource management (RRM) and wireless security.

The AP64 can operate in either multi-user or single-user mode. The AP64 is backward compatible with the 802.11a, 802.11b, 802.11g, 802.11n, and 802.11ac wireless standards.

The AP64 provides maximum data rates of 2400 Mbps in the 6-GHz band, 1200 Mbps in the 5-GHz band, and 575 Mbps in the 2.4-GHz band.

Figure 1: Front and Rear View of AP64

AP64 Access Point Models

The AP64 is available in the following models:

Model	Antenna	Regulatory Domain
AP64-US	Internal	United States only
AP64-WW	Internal	Outside of the United States

> (i) **NOTE**: Juniper products are manufactured in accordance with electrical and environmental regulations specific to certain regions and countries. Customers are responsible for ensuring that any regional or country-specific SKUs are used only in the specified authorized area. Failure to do so may void the warranty of Juniper products.

Benefits of AP64 Access Points

- Deployment in extreme conditions—You can deploy the rugged and weather-resistant AP in extremely harsh indoor or outdoor environments.

- Simple and quick deployment—You can deploy the AP with minimal manual intervention. The AP automatically connects to the Mist cloud after powering on, downloads its configuration, and connects to the appropriate network. Automatic firmware upgrades ensure that the AP runs the latest firmware version.

- Proactive troubleshooting—The AI-driven Marvis® Virtual Network Assistant leverages the Mist AI to identify issues proactively and provide recommendations to fix issues. Marvis can identify issues such as offline APs and APs with insufficient capacities and coverage issues.

- Automatic RF optimization—Juniper radio resource management (RRM) automates dynamic channel and power assignment, which helps reduce interference and enhance user experience. Mist AI monitors the coverage and capacity metrics to optimize the RF environment.

AP64 Components and Specifications

Figure 2 on page 4 shows the components on the AP64.

Figure 2: AP64 Components

Reset button (located behind this cover)

Table 1: AP64 Components

Component	Description
ETH0/PoE IN	100/1000/2500BASE-T RJ-45 port that supports an 802.3at-powered or 802.3bt-powered device
Reset	Reset button that you can use to reset the AP configuration to the factory default. See *Reset an AP to the Factory-Default Configuration*.
Status LED	A multicolor status LED to indicate the status of the AP and to help troubleshoot issues. See *Troubleshoot a Juniper Access Point*.

The AP64 also has a grounding point on the rear. Figure 3 on page 6 shows the location of the grounding point on the AP64.

Figure 3: Rear Panel of AP64

For AP64 specifications, see the AP64 Datasheet.

Power-On Options for the AP64

You can use any of the following options to power on the AP:

- Power over Ethernet plus (PoE+) from an Ethernet switch

    We recommend that you use an Ethernet cable with a maximum length of 100 m to connect the access point (AP) to the switch port.

If you use an Ethernet cable that is longer than 100 m by placing an Ethernet PoE+ extender in the path, the AP might power up, but the Ethernet link does not transmit data across such a long cable. You might see the status LED blink yellow twice indicating that the AP is unable to receive data from the switch.

- PoE injector

See PoE Requirements for Juniper Mist APs for the power requirements for an AP64.

2
CHAPTER

Installation

IN THIS CHAPTER

Mount the AP64 Access Point

You can mount the AP64 either on a wall or on a pole using two methods—flush mount or articulating mount.

Mounting Brackets for AP64

We ship the AP64 with the APOUTBR-FM2 flush mount brackets. You can order the articulating mount brackets separately.

Table 2 on page 10 lists the part numbers for the mounting brackets.

Table 2: Part Numbers for AP64 Mounting Brackets

| Part Number	Description
APOUTBR-FM	Flush mount brackets
APOUTBR-FM2	Flush mount brackets (new)
APOUTBR-ART2	Articulating mount brackets

Mounting Brackets for Flush Mount Method

The mounting accessories for flush mounting include the following:

- One flush mount bracket (part number: APOUTBR-FM)

- Two hose clamps

- Four M6 screws

- Four sets of M6 screws, washers, and spring washers

- Five sets of anchors and screws

shows the screw holes to use for mounting on a wall and pole.
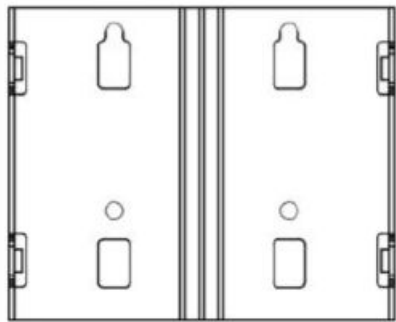
Figure 4: APOUTBR-FM Flush Mount Bracket
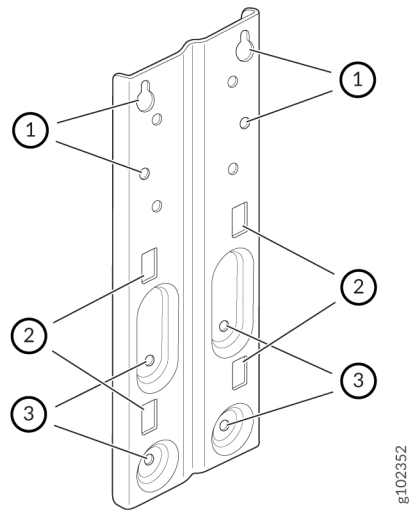
1—Screw holes to use for mounting an AP63 on a wall	2—Holes to use for attaching hose clamps
3—Screw holes to use for attaching the bracket to an AP63	

Mounting Brackets for New Flush Mount Method

The mounting accessories for flush mounting include the following:

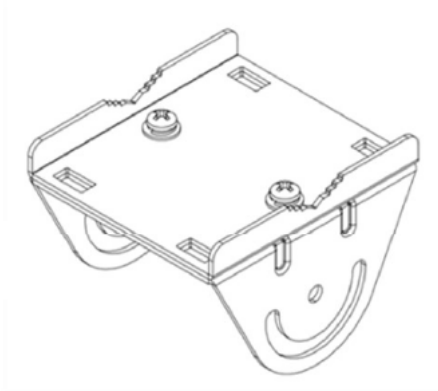- One flush mount bracket (part number: APOUTBR-FM2)

- Two hose clamps

- Four sets of M6 screws, washers, and lock washers
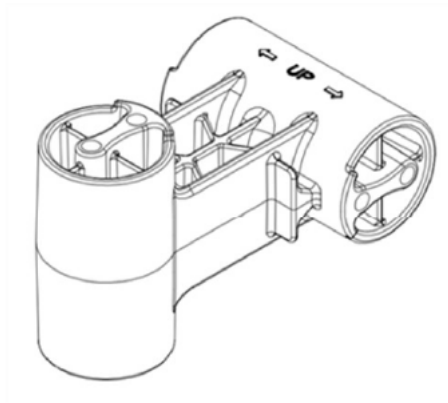
- Five sets of anchors and screws

Mounting Brackets for Articulating Mount Method

The mounting accessories for articulating mounting include the following:
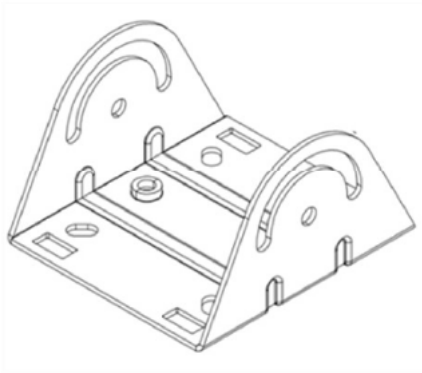
- Three mounting brackets (part number: APOUTBR-ART2):

  - Mounting bracket 1

  - Mounting bracket 2

  - Mounting bracket 3

- Four M6x10mm screws

- Four bolts and nuts

Connect the Grounding Cable

We recommend that you ground the AP before mounting it on a wall or pole. The AP64 has a single-hole protective grounding terminal on the rear. Use this grounding terminal to ground the AP.

To ground the AP64:

1. Remove the screw.
2. Place the grounding lug attached to the grounding cable over the grounding terminal.
3. Secure the grounding cable lug to the grounding terminal with the screw.

Mount the AP64 on a Wall Using APOUTBR-FM (Flush Mount)
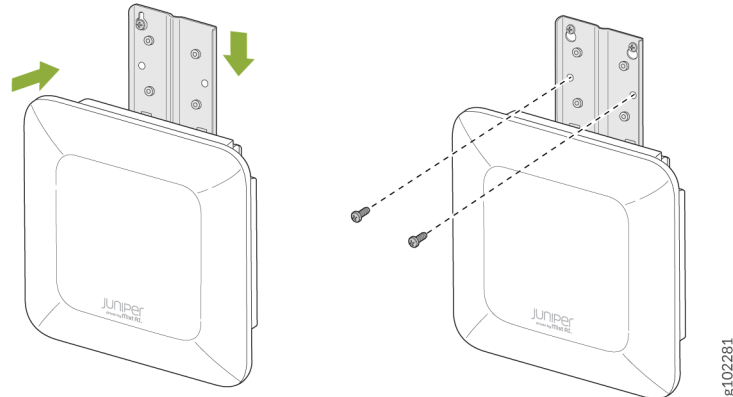
To flush mount the AP64 on a wall:

1. Drill four holes on the wall based on the location of holes marked with callout #1 in Figure 4 on page 11
2. Insert screws in the two upper holes. Do not tighten the screws fully.
3. Attach the APOUTBR-FM flush mount bracket to the AP by using the four screws, washers, and lock washers provided along with the AP. Use the bracket screw holes marked with callout #3 in Figure 4 on page 11.

Figure 5: Attach the APOUTBR-FM Flush Mount Bracket to an AP64
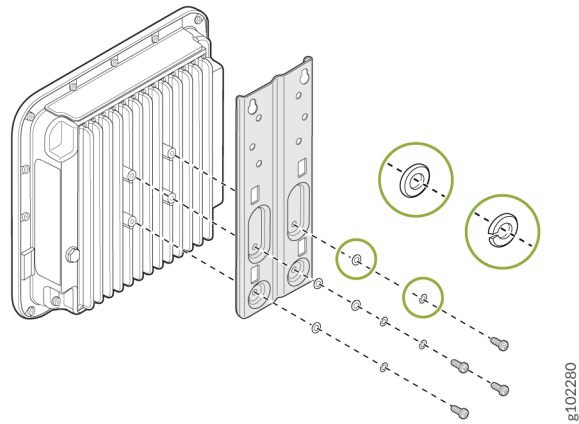
4. Position the AP such that the two screws that you inserted in Step 1 fit into the holes in the bracket. Slide the AP downward so that the screws lock in place.

Figure 6: Mount an AP64 on a Wall (Flush Mount)

5. Insert the other two screws and then tighten all the four screws.

Mount the AP64 on a Pole Using APOUTBR-FM (Flush Mount)

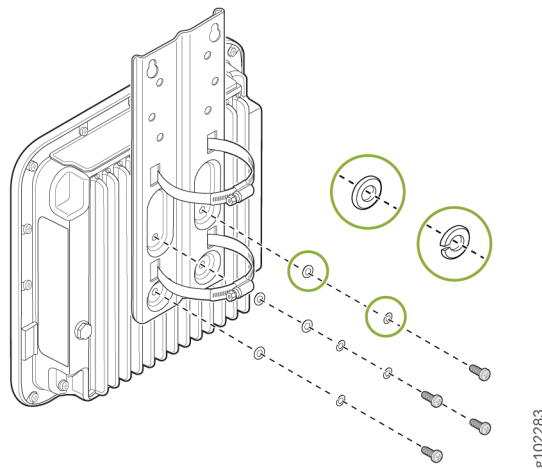To flush mount the AP64 on a pole:

1. Attach the hose clamps to the APOUTBR-FM flush mount bracket. Use a screwdriver to release the hose clamps and then pass the hose clamps through the slots in the flush mount bracket.

**Figure 7: Attach Hose Clamps to the APOUTBR-FM Flush Mount Bracket**
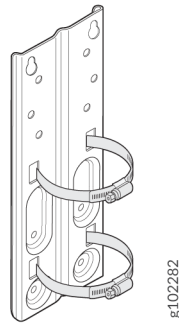
2. Attach the APOUTBR-FM flush mount bracket to the AP by using the four screws, washers, and lock washers provided along with the AP.

Figure 8: Attach the APOUTBR-FM Flush Mount Bracket to an AP64

3. Mount the AP on the pole. Wind the open end of the hose clamps around the pole and tighten the hose clamp screws by using a screwdriver. Tighten the screws until the AP and bracket assembly are secured in place.

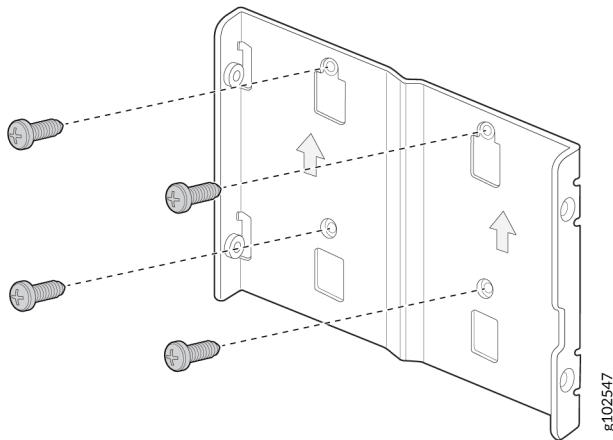**Figure 9: Mount an AP64 on a Pole (Flush Mount)**
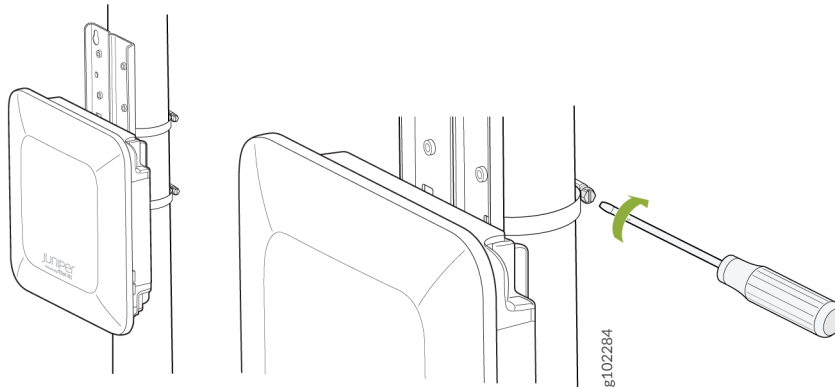
Mount the AP64 on a Wall Using APOUTBR-FM2 (Flush Mount)
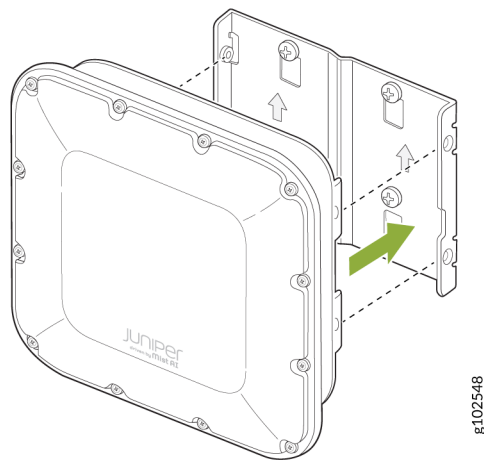
To flush mount the AP64 on a wall:

1. Drill four holes on the wall based on the location of holes in the APOUTBR-FM2 mounting bracket.

2. Install the APOUTBR-FM2 mounting bracket on the wall using the four screws.

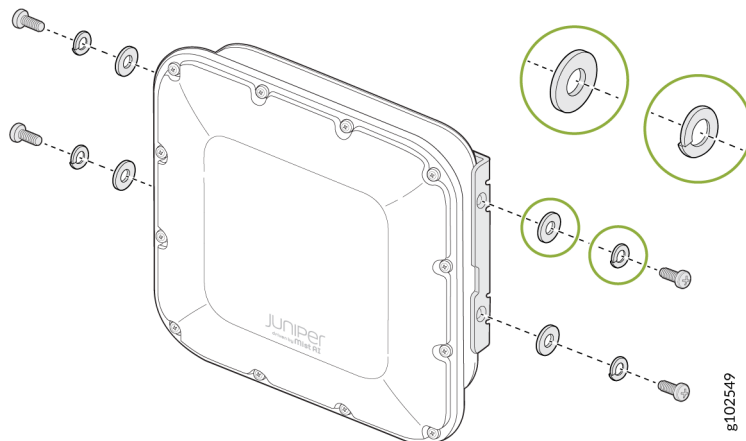**Figure 10: Install the APOUTBR-FM2 Mounting Bracket**

3. Attach the AP64 to the APOUTBR-FM2 mounting bracket.

Figure 11: Attach the AP64 to the APOUTBR-FM2

4. Secure the AP64 by using the four M6 screws, washers, and lock washers provided along with the AP.

Figure 12: Mount the AP64 on a Wall (Flush Mount)
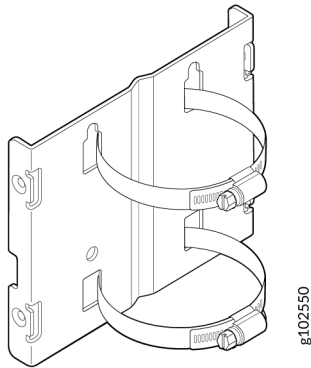

Mount the AP64 on a Pole Using APOUTBR-FM2 (Flush Mount)

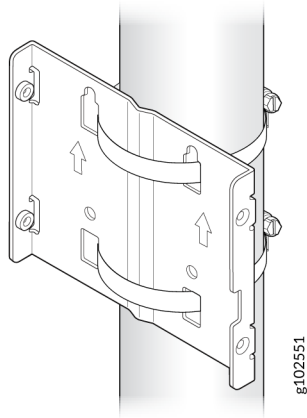To flush mount the AP64 on a pole:

1. Attach the hose clamps to the APOUTBR-FM2 mounting bracket. Use a screwdriver to release the hose clamps and then pass the hose clamps through the slots in the flush mount bracket.

Figure 13: Attach Hose Clamps to the APOUTBR-FM2 Mounting Bracket

2. Secure the APOUTBR-FM2 mounting bracket to the pole. Wind the open end of the hose clamps around the pole and tighten the hose clamp screws by using a screwdriver. Tighten the screws until the mounting bracket is secured in place.

Figure 14: Install the APOUTBR-FM2

3. Attach the AP64 to the APOUTBR-FM2 mounting bracket using the four M6 screws, washers, and lock washers provided along with the AP.

Figure 15: Mount an AP64 on a Pole (Flush Mount)
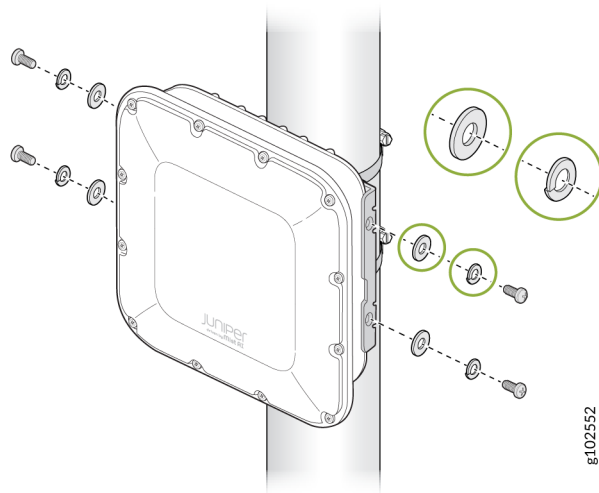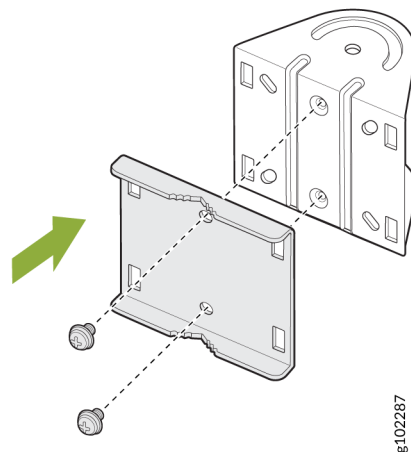

Mount the AP64 on a Wall (Articulating Mount)

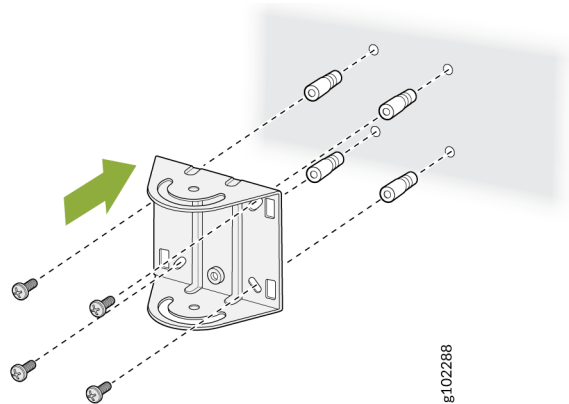To mount the AP64 on a wall using the articulating mount bracket:

1. Disassemble the APOUTBR-ART2 mounting bracket 1 by removing the two screws.

Figure 16: Disassemble the APOUTBR-ART2 Mounting Bracket 1

2. Install the APOUTBR-ART2 mounting bracket 1 on the wall using four screws.

Figure 17: Install the APOUTBR-ART2 Mounting Bracket 1 on a Wall

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3. Attach the APOUTBR-ART2 mounting bracket 2 to the mounting bracket 1 by using two bolts and nuts. Orient the side with "← UP → " as shown in Figure 18 on page 20.

Figure 18: Attach the APOUTBR-ART2 Mounting Bracket 2 to the Mounting Bracket 1
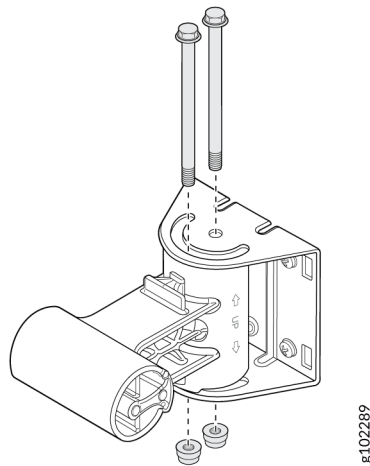
g102289

4. Attach the APOUTBR-ART2 mounting bracket 3 to the AP64 by using the four M6 screws, washers, and lock washers provided along with the AP.

Figure 19: Attach the APOUTBR-ART2 Mounting Bracket 3 to the AP64
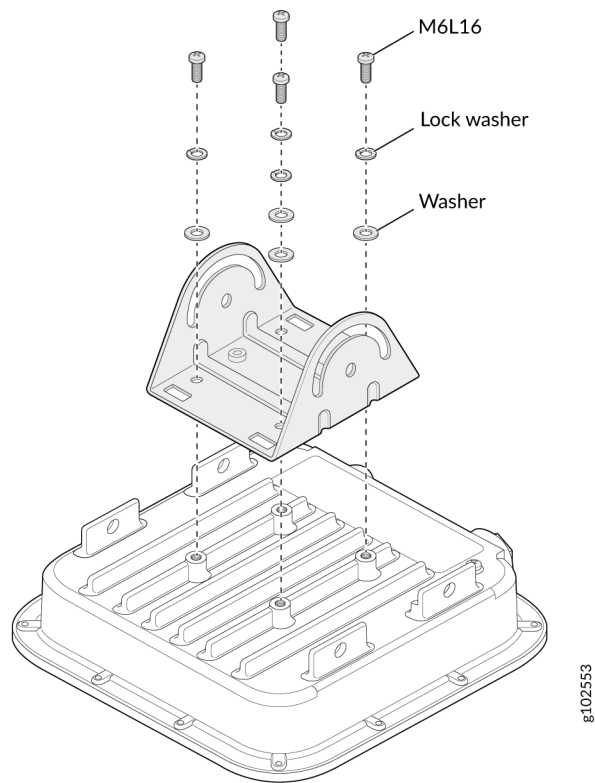
M6L16

Lock washer

Washer

g102553

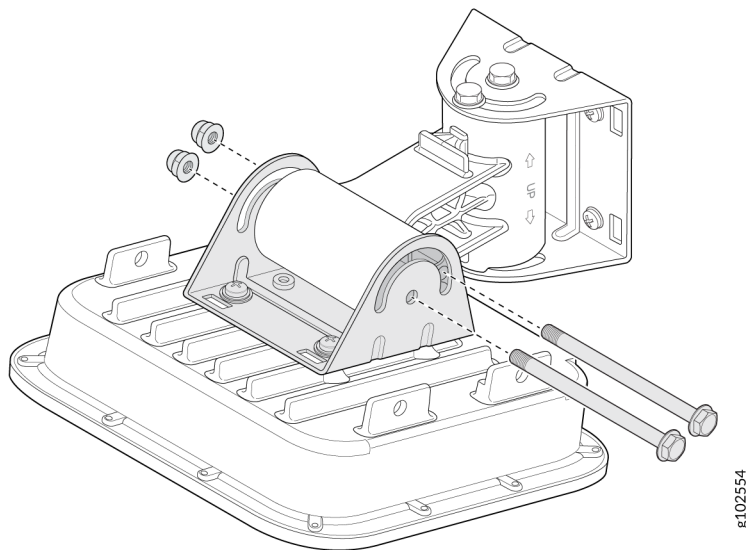5. Attach the APOUTBR-ART2 mounting bracket 2 to the mounting bracket 3 by using two bolts and nuts.

Figure 20: Mount the AP64 on a Wall (Articulating Mount)

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Mount the AP64 on a Pole (Articulating Mount)

To mount the AP64 on a wall using the articulating mount bracket:

1. Attach the hose clamps to the APOUTBR-ART2 mounting bracket 1. Use a screwdriver to release the hose clamps and then pass the hose clamps through the slots on the bracket.

2. Attach the APOUTBR-ART2 mounting bracket 1 to the pole. Wind the open end of the hose clamps around the pole and tighten the hose clamp screws by using a screwdriver. Tighten the screws until the bracket is secured in place.

Figure 21: Attach the APOUTBR-ART2 Mounting Bracket 1 to a Pole

3. Attach the APOUTBR-ART2 mounting bracket 2 to the mounting bracket 1 by using two bolts and nuts included in the bracket kit. Orient the side with the label ← UP → as shown in Figure 22 on page 23.

Figure 22: Attach the APOUTBR-ART2 Mounting Bracket 2 to the Mounting Bracket 1
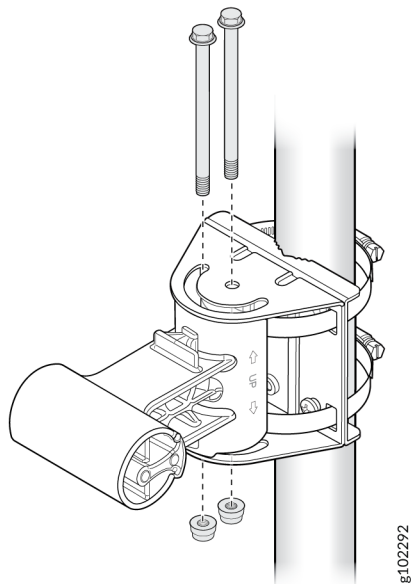
4. Attach the APOUTBR-ART2 mounting bracket 3 to the AP64 by using the four M6 screws, washers, and lock washers provided along with the AP.

Figure 23: Attach the APOUTBR-ART2 Mounting Bracket 3 to the AP64
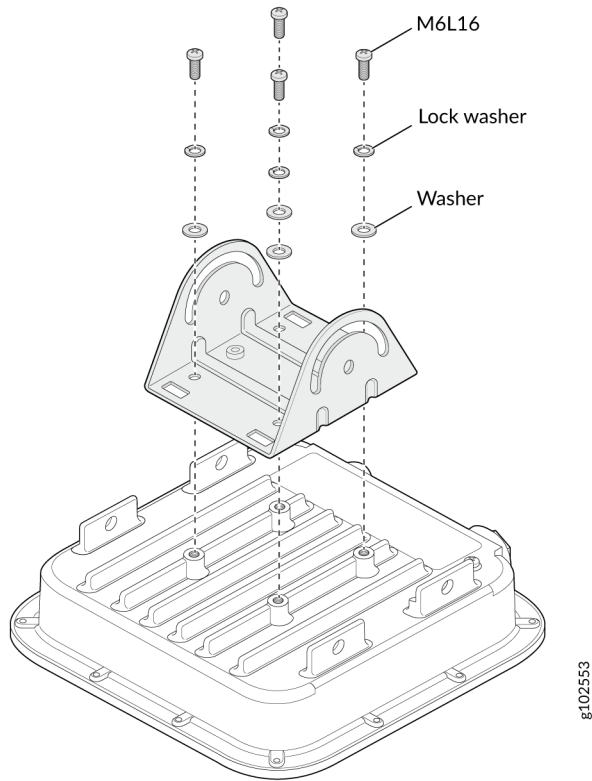
5. Attach the APOUTBR-ART2 mounting bracket 2 to the mounting bracket 3 by using two bolts and nuts.

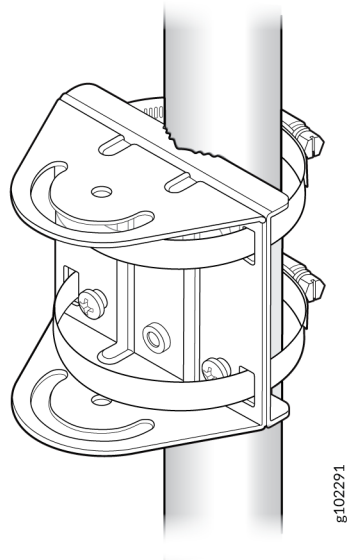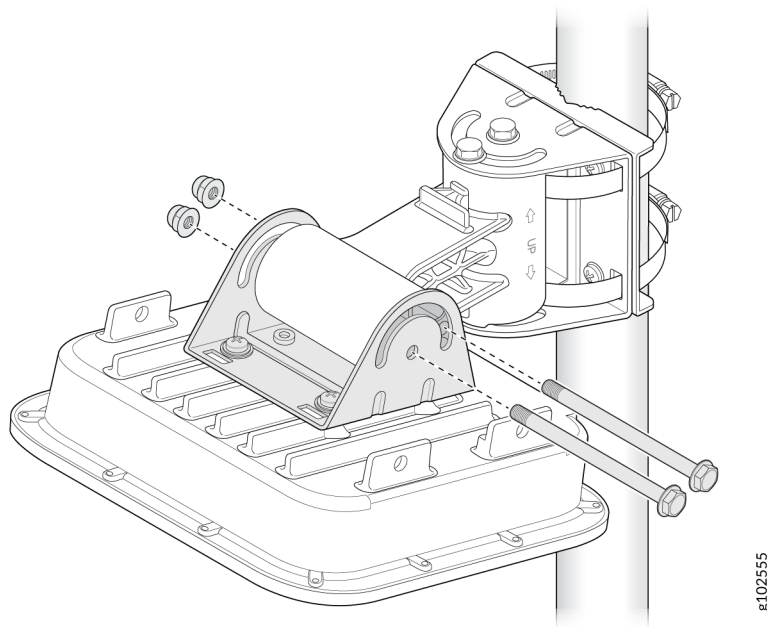**Figure 24: Mount the AP64 on a Pole (Articulating Mount)**

Connect an RJ-45 Cable Gland

Use an RJ-45 cable gland when you connect an RJ-45 cable to the AP. The cable gland helps secure the RJ-45 cable and protects the cable from damage. To connect an RJ-45 cable using the cable gland:

1. Disassemble the cable gland:

    a. Remove the cable gland nut by turning it counter-clockwise.

    b. Remove the blue seal. Ensure that you select the correct seal. The cable gland has two seals—a blue seal (7 mm through 9.5 mm diameter) and a red seal (5.5 mm through 7 mm diameter).

Figure 25: Disassemble an RJ-45 Cable Gland
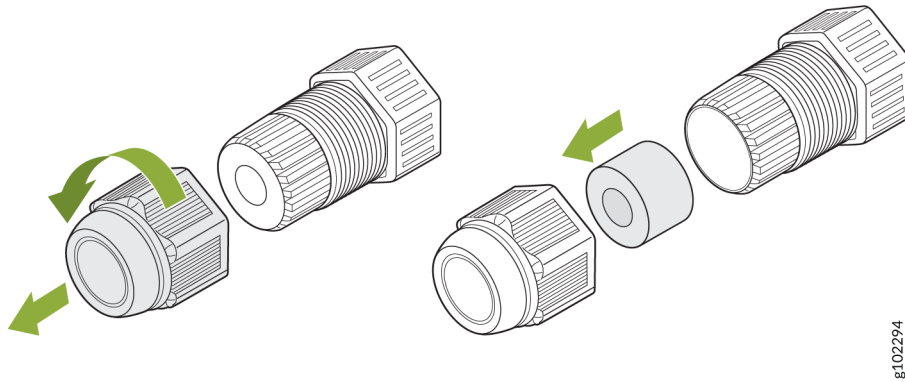
2. Insert the RJ-45 cable through the cable gland:

   a. Open the seal and insert the RJ-45 cable through the nut and the seal.

   Figure 26: Insert the RJ-45 Cable Through the Nut and the Seal of the Cable Gland
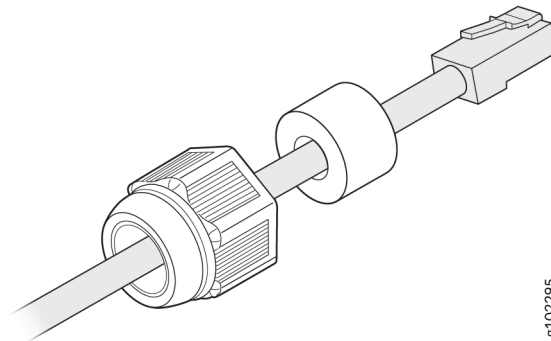
   b. Push the RJ-45 cable through the cable gland. Push the seal into the cable gland and loosely tighten the nut.

Figure 27: Push the RJ-45 Cable Through the Cable Gland
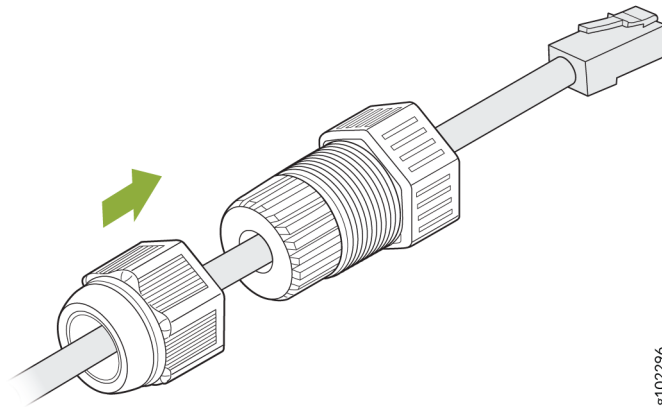
3. Connect the RJ-45 cable to the AP port. Attach the cable gland to the AP and tighten it with a torque of 10–12 kg-cm. Then, fully tighten the nut to the cable gland with a torque of 7–10 kg-cm.

Figure 28: Attach a Cable Gland to the AP64

Connect an AP64 to the Network and Power It On

When you power on an AP and connect it to the network, the AP is automatically onboarded to the Juniper Mist cloud. The AP onboarding process involves the following steps:

- When you power on an AP, the AP obtains an IP address from the DHCP server on the untagged VLAN.

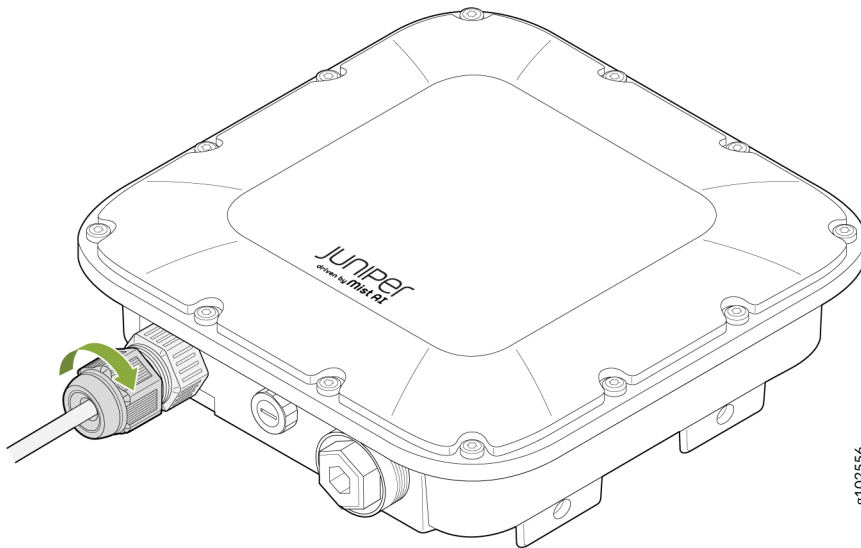- The AP performs a Domain Name System (DNS) lookup to resolve the Juniper Mist cloud URL. See Firewall Configuration for the specific cloud URLs.

- The AP establishes a HTTPS session with the Juniper Mist cloud for management.

- The Mist cloud then provisions the AP by pushing the required configuration after the AP is assigned to a site.

To ensure that your AP has access to the Juniper Mist cloud, ensure that the required ports on your Internet firewall are open. See Firewall Configuration.

To connect the AP to the network:

1. Connect an Ethernet cable from a switch to the **Eth0+PoE** port on the AP.

   For information on power requirements, see PoE Requirements for Juniper Mist APs. If the switch or router that you connect to the AP does not support PoE, use an 802.3at or 802.3bt power injector.

   - Connect an Ethernet cable from the switch to the **data in** port on the power injector.

   - Connect an Ethernet cable from the **data out** port on the power injector to the **Eth0+PoE** port on the AP.

2. Wait for a few minutes for the AP to boot completely.
   When the AP connects to the Juniper Mist portal, the LED on the AP turns green, which indicates that the AP is connected and onboarded to the Juniper Mist cloud.

   After you've onboarded the AP, you can configure the AP according to your network and requirements. See the Wireless Configuration Guide and Location Services Guide to configure your AP.

> ⓘ **NOTE**: If the AP is unable to connect to the Juniper Mist cloud, you can use the status LED to troubleshoot. See _Troubleshoot a Juniper Access Point_.

A few things to keep in mind about your AP:

- When an AP boots for the first time, it sends a Dynamic Host Configuration Protocol (DHCP) request on the trunk port or native VLAN. You can reconfigure the AP to assign it to a different VLAN after you've onboarded the AP (that is, the AP state shows as Connected in the Juniper Mist portal. Ensure

that you reassign the AP to a valid VLAN because, on rebooting, the AP sends DHCP requests only on that VLAN. If you connect the AP to a port on which the VLAN doesn't exist, Mist displays a **No IP address found** error.

- We recommend that you avoid using a static IP address on an AP. The AP uses the configured static information whenever it reboots, and you cannot reconfigure the AP until it connects to the network. If you need to correct the IP address, you'll need to reset the AP to the factory-default configuration.

  If you must use a static IP address, we recommend that you use a DHCP IP address during the initial setup. Before assigning a static IP address, ensure that:

  - You've reserved the static IP address for the AP.

  - The switch port can reach the static IP address.

3
CHAPTER

Troubleshoot

IN THIS CHAPTER

Troubleshooting Overview

If your access point (AP) is not working correctly, follow these steps to troubleshoot the issue:

- See the **Marvis** > **Marvis Actions** dashboard to identify issues. See *Marvis Actions Overview*.

- Use Marvis Query Language to monitor your network. See *Troubleshoot Using Marvis Query Language*.

- Check the blinking pattern of the status LED. See *AP Troubleshooting Overview*.

If you are unable to resolve the issue, you can create a support ticket on the Juniper Mist portal.
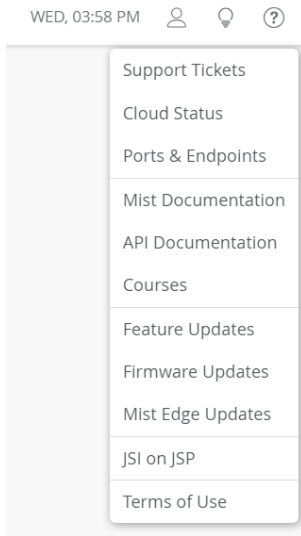
Contact Customer Support

You can create a support ticket on the Juniper Mist portal. The Juniper Mist Support team will contact you to help resolve your problem. If needed, you can request a Return Material Authorization (RMA).

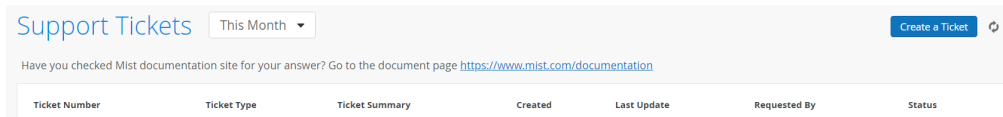Before you begin, ensure that you have the following information:

- The MAC address of the faulty AP

- The exact LED blink pattern seen on the AP (or a short video of the blinking pattern)

- The system logs from the AP
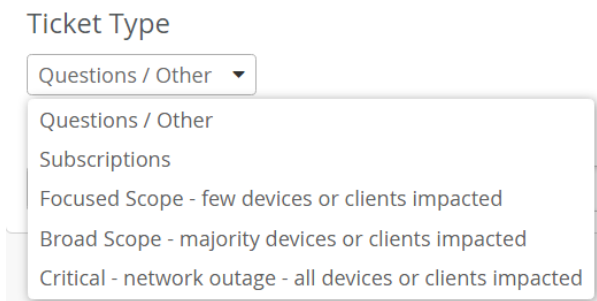
To create a support ticket:

1. Click the **?** (question mark) icon in the top-right corner of the Juniper Mist portal.
2. Select **Support Tickets** from the drop-down menu.

WED, 03:58 PM

Support Tickets

Cloud Status

Ports & Endpoints

Mist Documentation

API Documentation

Courses

Feature Updates

Firmware Updates

Mist Edge Updates

JSI on JSP

Terms of Use

3. Click **Create a Ticket** in the top-right corner of the **Support Tickets** page.

Support Tickets | This Month ▼ | | Create a Ticket |

Have you checked Mist documentation site for your answer? Go to the document page https://www.mist.com/documentation

| Ticket Number | Ticket Type | Ticket Summary | Created | Last Update | Requested By | Status |

4. Select the appropriate ticket type depending on the severity of your problem.

Ticket Type

| Questions / Other ▼ |

Questions / Other

Subscriptions

Focused Scope - few devices or clients impacted

Broad Scope - majority devices or clients impacted

Critical - network outage - all devices or clients impacted

ⓘ **NOTE**: Selecting **Questions/Other** will open a search box and redirect you to available documentation and resources related to your issue. If you cannot resolve your issue by using the suggested resources, click **I still need to create a ticket**.

5. Enter a ticket summary, and select the sites, devices, or clients that are impacted.

   If you are requesting an RMA, select the impacted device.

6. Enter a description to explain the issue in detail.

   Provide the following information:

   - The MAC address of the device

   - The exact LED blink pattern seen on the device

   - The system logs from the device

   > **NOTE**: To share device logs:
   >
   > a. Navigate to the **Access Points** page in the Juniper Mist portal. Click the impacted device.

> **b.** Select **Utilities** > **Send AP Log to Mist** in the top right corner of the device page.
>
> It takes at least 30 seconds to 1 minute to send the logs. Do not reboot your device in that interval.

7. (Optional) You can provide any additional information that may help to resolve the issue, such as:

   - Is the device visible on the connected switch?

   - Is the device receiving power from the switch?

   - Is the device receiving an IP address?

   - Is the device pinging on the Layer 3 (L3) gateway of your network?

   - Have you already followed any troubleshooting steps?

8. Click **Submit**.